CLAIMS:

1. An apparatus for compensating for variations in luminescence and/or color in a voltage-driven, flexible display, said variations being associated with a bending of said flexible display, said apparatus comprising:

- measurement means for measuring the cell gap at at least a part of the flexible display, and
- adjustment means for adjusting the voltages, which are applied to said part of said flexible display, depending on the measured cell gap,

characterized in that the measurement means are set to repeatedly measure the cell gap, and the adjustment means are set to repeatedly adjust the applied voltages in response to the measured cell gap.

2. An apparatus according to claim 1, wherein a frequency of repetition of measurement and a frequency of repetition of adjustment are constant.

3. An apparatus according to claim 1 or 2, wherein at least one of a frequency of repetition of measurement and a frequency of repetition of adjustment are controlled as a function of user settings, operation conditions or both.

4. An apparatus according to any of the claims 1-3, wherein the adjustment means are effected only when a change in cell gap is detected.

5. An apparatus according to claim 4, wherein the adjustment means are effected only when a change in cell gap above a certain threshold is detected.

6. An apparatus according to any of the claims 1-5, wherein the flexible display is flexible in one direction only, and wherein the measurement means are distributed along the axis of flexibility.

7. An apparatus according to any of the claims 1-5, wherein the flexible display is flexible in two directions, and wherein the measurement means are distributed throughout the flexible display.

8. An apparatus according to any of the claims 1-7, wherein at least one measurement means is arranged within at least one lithographic spacer.

9. An apparatus according to any of the claims 1-8, wherein the number and arrangement of the measurement means have been optimized given the flexibility of the display.

10. An apparatus according to any of the claims 1-9, wherein the measurement means comprise at least one piezoelectric crystal.

11. A flexible display comprising an apparatus according to any of the claims 1-10.

12. A flexible display according to claim 11, wherein the flexible display is an active-matrix display comprising a plurality of pixels, and a plurality of conductors and wherein the measurement means are set to measure the cell gap at a part of the display by measuring the time which is required for charging a pixel when a constant voltage is supplied on an associated conductor.

13. An flexible display according to claim 11, wherein the flexible display is a passive-matrix display, and wherein the measurement means are set to deduce the cell gap by supplying an AC-signal to a row conductor, measuring the amplitude of the signal on the column conductors and compare it with the amplitude of the signal which is supplied on an associated conductor.

14. A portable apparatus comprising a flexible display according to any of the claims 11-13.

15. A portable apparatus according to claim 14, wherein the portable apparatus is one of an electronic paper, a personal digital assistant (PDA), a mobile telephone, a set of

wearable electronics, a portable computer, an electronic calendar, an electronic book, a television or a video game control.

16. A method for compensating for variations in luminescence and/or color in a voltage-driven, flexible display, said variations being associated with a bending of said flexible display, wherein the method comprises the steps of:
measuring the cell gap at at least a part of the flexible display, and
adjusting the voltages, which are applied to said part of the flexible display, in response to the measured cell gap,
characterized in that the steps are performed repeatedly during operation of the flexible display.

17. A method according to claim 16, wherein the frequency of repetition of measurement and adjustment is constant.

18. A method according to claim 16, wherein at least one of a frequency of repetition of measurement and a frequency of repetition of adjustment are controlled as a function of user settings, operation conditions or both.

19. A method according to any of the claims 16-18, wherein said step of adjusting is performed only when a change in cell gap is detected.

20. A method according to claim 19, wherein said step of adjusting is performed only when a change in cell gap above a certain threshold is detected.